REMARKS

Claims 36-42 and 53-58 are pending in the present application. Claims 53-58 are allowed and claims 39 and 41 are objected to but are indicated to recite allowable subject matter. Applicants appreciate the recognition of the patentable nature of the present invention.

Claims 36, 40 and 42 stand rejected for anticipation by U.S. Patent No. 6,048,256 to Obeng et al. Claims 37 and 38 stand rejected for obviousness over Obeng et al.

Applicants respectfully traverse the rejections and urge allowance of the present application.

Claim 36 recites monitoring the turbidity of the slurry supplied to a semiconductor process chamber using a sensor. The Obeng reference is devoid of disclosing or suggesting monitoring of turbidity of slurry 160 supplied to a semiconductor process chamber using a sensor as recited in claim 36. As recited on page 2 of the Office Action, reference 180 corresponds to a polishing apparatus and reference 115 corresponds to a slurry dispenser. Accordingly, slurry dispenser 115 provides slurry 160 to polishing apparatus 180. The Obeng reference is entirely devoid of disclosing or suggesting monitoring turbidity of slurry supplied to a semiconductor process chamber within dispenser 115 using a sensor as positively recited in claim 36. Dispenser 115 of Obeng operates to supply slurry 160 to polishing apparatus 180 and the Obeng reference is devoid

of any monitoring of slurry supplied within dispenser 115 or a sensor configured to monitor slurry within dispenser 115.

Paragraph 2 on page 2 of the Office Action refers to teachings in column 2, lines 61-67 of Obeng as allegedly disclosing a sensor for monitoring turbidity. Such teachings refer to a physical parameter sensor system coupled with a mixing chamber configured to sense a physical property of the slurry. Referring to teachings in column 4, lines 57-67 of Obeng, the physical parameter sensor system is identified as reference 190 which is coupled with the mixing chamber 110. Obeng merely discloses the system 190 arranged to monitor physical parameters of components 121a-121h being mixed. Following appropriate mixing of such components, Obeng fails to disclose or suggest any sensing of slurries supplied to a semiconductor process chamber as recited in claim 36. Obeng expressly provides a slurry dispenser 115 for supplying slurry to polishing apparatus 180 and fails to disclose or suggest any sensing of slurry being dispensed using slurry dispenser 115.

In no fair interpretation can Obeng's disclosure of monitoring the mixing of components be fairly considered to disclose or suggest monitoring turbidity of a slurry supplied to a semiconductor processor chamber using a sensor as explicitly recited in claim 36. Significant changes to slurry may occur between mixing and actual dispensing to a semiconductor processor chamber. For example, settling may occur within plumbing between a mixer and a destination chamber resulting in a slurry of a different turbidity supplied to a chamber which would not be

sensed or detected using the arrangement of Obeng. Obeng's sensing of a slurry within a mixer does not disclose or suggest monitoring turbidity of slurry supplied to a semiconductor process chamber using a sensor as recited in claim 36. Claim 36 recites limitations not shown or suggested in the prior art of record and claim 36 is allowable for at least this reason.

The Office Action identifies references 123a-123h as allegedly providing slurry supplying connections. Applicants refer to the teachings in Col. 4, lines 27-30 of Obeng stating that 123a-123h refer to metering devices to introduce chemical components 121a-121h to mixing chamber 110 at an appropriate rate to adjust the composition of slurry 160. Accordingly, references 123a-123h meter individual components used to from a slurry and do not supply slurries. The teachings of Obeng regarding the operation of references 123a-123h fail to disclose or suggest monitoring turbidity of a slurry supplied to a semiconductor process chamber using a sensor as recited in claim 36. claim 36 is allowable over the prior art.

The claims which depend from independent claim 36 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features which are neither shown nor suggested by the cited art.

With reference to claims 37 and 38, it is stated on page 3, paragraph 4 of the Office Action that Obeng does not disclose the specific location of the sensor. Thereafter, it is stated that the specific location would have been

obvious since it is within the general skill of the worker in the art to rearrange parts of an invention on the basis of its suitability for the user's preference as a matter of obvious design choice. Applicants disagree.

Obviousness rejections require sufficient motivation to combine and/or modify reference teachings. Referring to MPEP §2143.01 (8th ed.), there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine reference teachings. The mere fact that references *can* be combined or modified does not render the resultant combination obvious *unless the prior art also suggests the desirability of the combination*. MPEP §2143.01 *citing In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

Obviousness cannot be established by a combination of references unless there is some motivation in the art to support the combination. *See ACH Hospital Systems, Inc. v. Montifiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984) ("Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination."). The motivation for forming the combination must be something other than hindsight reconstruction based on using Applicant's invention as a road map for such a combination. *See, e.g., Interconnect Planning Corp. v. Feil*, 227 USPQ 543, 551 (Fed. Cir. 1985); *In re Mills*, 16 USPQ2d 1430 (Fed. Cir. 1990) (explaining that hindsight reconstruction is an improper basis for rejection of a claim).

Obeng discloses a sensor system 190 coupled directly with a mixing chamber and capable of collecting data regarding turbidity. Obeng is concerned with monitoring of turbidity and other physical parameters of slurry *during mixing operations* as clearly recited in column 4, line 57 spanning to column 5, line 5 of Obeng wherein it is disclosed that system 190 may sense temperature and the temperature of slurry may be adjusted around mixing chamber 110. There is absolutely no motivation for one of skill in the art to modify the teachings of Obeng to arrive at the positively recited method of claim 37 reciting supplying slurry using a supply connection and monitoring slurry within the supply connection. Why would one be motivated to modify the Obeng teachings concerned with monitoring slurry during mixing operations to monitoring slurry within a supply connection where no mixing occurs? Obeng specifically refers to changing operations of mixer 110 and adjusting parameters or conditions within mixer 110 with no mention of monitoring turbidity of a slurry supplied within a supply connection to a semiconductor process chamber. One would not be motivated to modify Obeng to arrive at the method of claim 37 and the 103 rejection of claim 37 is improper for at least this reason.

With reference to claim 38, Obeng is devoid of disclosing or suggesting how coupling of any sensor is to occur. One would not be motivated to modify the Obeng teachings regarding monitoring mixing operations of a mixer to arrive at Applicant's method of claim 38 reciting coupling the sensor with the supply connection. The obviousness rejection of claim 38 without proper motivation is

improper and Applicants respectfully request withdrawal of the obviousness rejection of claim 38 for at least this reason.

Applicants traverse and seasonably challenge under MPEP §2144.03 (8th Edition) the assertion in the Office Action that the location of the sensor is obvious and a mere matter of obvious design choice stated in support of the 103 rejection. Judicial notice is construed narrowly and facts found in such a manner are taken with an eye toward narrowing the scope of any conclusions to be drawn therefrom. Assertions of technical facts in areas of esoteric technology must always be supported by citation to some reference work recognized as standard in the pertinent art and the applicant given, in the Patent Office, the opportunity to challenge the correctness of the assertion or the notoriety or repute of the cited reference. Allegations concerning specific knowledge of the prior art, which might be peculiar to a particular art should also be supported and the applicant similarly given the opportunity to make a challenge. *In re Pardo*, 684 F.2d 912, 214 USPQ 673, 677 (C.C.P.A. 1982).

Accordingly, Applicants request withdrawal of the 103 rejection of claims 37, 38 for at least this additional reason. If such claims are not found to be allowable in the next Action, Applicants respectfully request submission of an affidavit or prior art which allegedly discloses positively recited limitations of claims 37 and 38 in support of the 103 rejection so Applicants may appropriately respond.

Applicants respectfully request allowance of all pending claims.

The Examiner is requested to phone the undersigned if the Examiner believes such would facilitate prosecution of the present application. The undersigned is available for telephone consultation at any time during normal business hours (Pacific Time Zone).

Respectfully submitted,

Dated: 4/24/02

By: _____
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